Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-23. (Canceled)

24. (Currently Amended) A method of operating a solid fuel fired boiler, comprising:

introducing a solid fuel into the boiler, wherein the solid fuel is a coal having a sulfur content of less than about 1.5 wt.% (dry basis of the coal);

introducing an iron-containing material into the boiler, wherein the iron-containing material is at least one of mill scale from steel production and dust from blast furnace gas cleaning equipment; and

at least partially combusting the solid fuel to produce an ash slag, wherein, in the at least partially combusting step, at least one of the following is true:

(i) the ash slag has at least one ash fusion temperature characteristic selected from the group consisting of initial deformation temperature, softening temperature, hemispherical temperature, and fluid temperature less than the same ash fusion temperature characteristic of the ash slag produced from combustion of the solid fuel alone; and

(ii) the ash slag has a melting point less than the melting point of a second ash slag produced from the combustion of the solid fuel alone.

25. (Previously Presented) The method of claim 24, wherein the ash slag has a viscosity during the at least partially combusting step that is less than the viscosity of the second ash slag produced from combustion of the solid fuel alone.

26. (Previously Presented) The method of claim 24, wherein the ash slag has a melting point during the at least partially combusting step that is less than the melting point of the second ash slag produced from combustion of the solid fuel alone.

27-32. (Canceled)

33. (Currently Amended) The method of claim 24, wherein at least a portion of the iron-containing material fluxes the ash slag to produce [[an]] a second ash slag having at least one characteristic selected from the group consisting of viscosity and melting temperature less than the same characteristic of the second ash slag produced from combustion of the solid fuel alone.

34. (Previously Presented) The method of claim 25, wherein a T_{250} temperature at which the ash slag has a viscosity of 250 poise produced from the combustion of the solid fuel and iron-containing material is at least 100 degrees Fahrenheit lower than the T_{250} temperature of the second ash slag produced from the combustion of the solid fuel alone.

35. (Canceled)

36. (Previously Presented) The method of claim 24, wherein the melting point of the second ash slag is less than 2600 degrees F.

37-43. (Canceled)

44. (Previously Presented) The method of claim 24, wherein (i) is true.

45. (Previously Presented) The method of claim 24, wherein the at least one ash fusion temperature characteristic is fluid temperature.

46. (Previously Presented) The method of claim 24, wherein step (ii) is true.

47. (Previously Presented) The method of claim 24, wherein the solid fuel is introduced into a wet-bottom boiler.

48. (Previously Presented) The method of claim 24, wherein the solid fuel comprises a sub-bituminous coal and wherein the solid fuel has a low iron content and a high alkali content.

49. (Previously Presented) The method of claim 24, wherein the boiler is for at least one of steam production and electricity generation and wherein the iron-containing material has a P_{90} size of no more than about 300 microns.

50. (Previously Presented) The method of claim 24, wherein the boiler is a cyclone boiler.

51. (Previously Presented) The method of claim 24, wherein the ash slag has a viscosity such that the ash slag flows from the boiler.

52. (Previously Presented) The method of claim 50, further comprising reducing the particle size of the solid fuel prior to introducing the solid fuel into the boiler.

53. (Previously Presented) The method of claim 24, wherein the iron-containing material is mill scale from steel production.

54. (Previously Presented) The method of claim 24, wherein the iron-containing material is dust from blast furnace gas cleaning equipment.

55. (Previously Presented) The method of claim 24, wherein the iron-containing material comprises at least one of ferrous oxide and ferric iron oxide.

56. (Previously Presented) The method of claim 24, wherein the iron-containing material comprises magnetite.

57. (Previously Presented) The method of claim 24, wherein the iron-containing material comprises at least one carbon compound.

58. (Previously Presented) The method of claim 24, further comprising introducing at least one carbon compound along with the iron-containing material, the at least one carbon compound promoting the reduction of iron oxides and the at least one carbon compound being one or more of a hydrocarbon, oil, grease, and xanthan gum.

59. (Currently Amended) The method of claim 24, wherein the boiler comprises:

[[a]] a particle size reduction device, wherein the solid fuel is fed to the device;

a burner;

a fuel transfer system communicating with the device and the burner; and

a combustion chamber comprising an enclosure at least partially surrounding the burner and further comprising:

introducing the iron-containing material into at least one of the fuel storage bunker, the fuel transfer system, the cyclone burner, and the combustion chamber.

60. (Previously Presented) The method of claim 50, wherein the cyclone boiler comprises:

a fuel storage bunker;

a cyclone burner;

a fuel transfer system communicating with the fuel storage bunker and the cyclone burner; and

a combustion chamber comprising an enclosure at least partially surrounding the burners.

61. (Previously Presented) The method of claim 24, wherein the iron-containing material is introduced into the boiler in an amount ranging from about 10 lb/ton of solid fuel to about 50 lb/ton of solid fuel.

62. (Previously Presented) The method of claim 24, wherein the ash slag has a total iron concentration of at least about 15 weight percent.

63. (Previously Presented) The method of claim 50, wherein the iron-containing material is added to the solid fuel before introducing the solid fuel and the iron-containing material into the boiler.

64. (Previously Presented) The method of claim 50, wherein the ash slag has a viscosity in the boiler less than the viscosity in the boiler of a second ash slag produced from the combustion of the solid fuel alone.

65. (Previously Presented) The method of claim 24, wherein the iron-containing material is selected from the group consisting of ferrous oxide, ferric oxide, ferrous sulfide, ferric sulfide, and combinations thereof.

66. (Previously Presented) The method of claim 44, wherein the at least one ash fusion temperature characteristic is less than 2600°F.

67. (Canceled)

68. (Currently Amended) A method of operating a solid fuel fired boiler, comprising:

introducing a solid fuel into a wet-bottom boiler, wherein the solid fuel is a low sulfur coal having a sulfur content of less than about 1.5 wt.% (dry basis of the coal);

introducing an iron-containing material into the wet-bottom boiler, wherein the iron-containing material is at least one of mill scale from steel production and dust from blast furnace gas cleaning equipment; and

at least partially combusting the solid fuel to produce an ash slag, wherein at least a portion of the iron-containing material fluxes the ash slag to cause the ash slag to have a melting temperature less than the melting temperature of a second ash slag produced from the combustion of the solid fuel alone.

69. (Previously Presented) The method of claim 68, wherein the solid fuel comprises a sub-bituminous coal, wherein the coal has a total iron content of less than about 10 wt.% (dry basis of the ash), and wherein the coal has a calcium content of at least about 15 wt.% (dry basis of the ash).

70. (Previously Presented) The method of claim 68, wherein the boiler is for at least one of steam production and electricity generation and wherein the iron-containing material has a P_{90} size of no more than about 300 microns.

71. (Previously Presented) The method of claim 68, wherein the boiler is a cyclone boiler.

72. (Previously Presented) The method of claim 68, wherein the ash slag has a viscosity such that the ash slag flows from the wet-bottom boiler.

73. (Previously Presented) The method of claim 68, further comprising reducing the particle size of the solid fuel prior to introducing the solid fuel into the boiler.

74. (Previously Presented) The method of claim 68, wherein the iron-containing material is mill scale from steel production.

75. (Previously Presented) The method of claim 68, wherein the iron-containing material is dust from blast furnace gas cleaning equipment.

76. (Previously Presented) The method of claim 68, wherein the iron-containing material comprises at least one of ferrous oxide and ferric iron oxide.

77. (Previously Presented) The method of claim 68, wherein the iron-containing material comprises magnetite.

78. (Previously Presented) The method of claim 68, wherein the iron-containing material comprises at least one carbon compound.

79. (Previously Presented) The method of claim 68, further comprising introducing at least one carbon compound along with the iron-containing material, the at least one carbon compound promoting the reduction of iron oxides and the at least one carbon compound being one or more of a hydrocarbon, oil, grease, and xanthan gum.

80. (Previously Presented) The method of claim 68, wherein the wet-bottom boiler comprises:

a particle size reduction device, wherein the solid fuel is fed to the device;

a burner;

a fuel transfer system communicating with the device and the burner; and

a combustion chamber comprising an enclosure at least partially surrounding the burner and further comprising:

introducing the iron-containing material into at least one of the fuel storage bunker, the fuel transfer system, the cyclone burner, and the combustion chamber.

81. (Previously Presented) The method of claim 71, wherein the cyclone boiler comprises:

a fuel storage bunker;

a cyclone burner;

a fuel transfer system communicating with the fuel storage bunker and the cyclone burner; and

a combustion chamber comprising an enclosure at least partially surrounding the burners.

82. (Previously Presented) The method of claim 68, wherein the iron-containing material is introduced into the boiler in an amount ranging from about 10 lb/ton of solid fuel to about 20 lb/ton of solid fuel.

83. (Previously Presented) The method of claim 68, wherein the ash slag has a total iron concentration of at least about 15 weight percent.

84. (Previously Presented) The method of claim 68, wherein the iron-containing material is added to the solid fuel before introducing the solid fuel and the iron-containing material into the boiler.

85. (Previously Presented) The method of claim 68, wherein the second ash slag has a viscosity in the boiler less than the viscosity in the boiler of the ash slag produced from the combustion of the solid fuel alone.

86. (Previously Presented) The method of claim 68, wherein the iron-containing material is selected from the group consisting of ferrous oxide, ferric oxide, ferrous sulfide, ferric sulfide, and combinations thereof.

87. (Previously Presented) The method of claim 68, wherein, in the at least partially combusting step, at least one ash fusion temperature characteristic selected from the group consisting of initial deformation temperature, softening temperature, hemispherical temperature, and fluid temperature of the ash slag is less than the same ash fusion temperature characteristic of a second ash slag produced from combustion of the solid fuel alone.

88. (Previously Presented) The method of claim 87, wherein the at least one ash fusion temperature characteristic is less than 2600°F.

89. (Canceled).

90. (Currently Amended) A method of operating a solid fuel fired boiler, comprising:

introducing a solid fuel into a wet-bottom boiler, the solid fuel comprising a low sulfur coal <u>having a sulfur content of less than about 1.5 wt.% (dry basis of the coal)</u>;

introducing an iron-containing material into the wet-bottom boiler, wherein the iron-containing material is at least one of mill scale from steel production and dust from blast furnace gas cleaning equipment; and

at least partially combusting the solid fuel to produce an ash slag, wherein at least a portion of the iron-containing material fluxes the ash slag to cause the ash slag to have a viscosity in the boiler less than the viscosity in the boiler of a second ash slag produced from the combustion of the solid fuel alone.

91. (Currently Amended) The method of claim 90, wherein the solid fuel comprises a sub-bituminous coal ~~and wherein the low sulfur coal has a total sulfur content of less than about 1.5 wt.% (dry basis of the coal)~~.

92. (Previously Presented) The method of claim 90, wherein the boiler is for at least one of steam production and electricity generation and wherein the iron-containing material has a P_{90} size of no more than about 300 microns.

93. (Previously Presented) The method of claim 90, wherein the boiler is a cyclone boiler, wherein the low sulfur coal has a total iron content of less than about 10 wt.% (dry basis of the ash), and wherein the low sulfur coal has a calcium content of at least about 15 wt.% (dry basis of the ash).

94. (Previously Presented) The method of claim 90, wherein the ash slag has a viscosity such that the ash slag flows from the wet-bottom boiler.

95. (Previously Presented) The method of claim 90, further comprising reducing the particle size of the solid fuel prior to introducing the solid fuel into the boiler.

96. (Previously Presented) The method of claim 90, wherein the iron-containing material is mill scale from steel production.

97. (Previously Presented) The method of claim 90, wherein the iron-containing material is dust from blast furnace gas cleaning equipment.

98. (Previously Presented) The method of claim 90, wherein the iron-containing material comprises at least one of ferrous oxide and ferric iron oxide.

99. (Previously Presented) The method of claim 90, wherein the iron-containing material comprises magnetite.

100. (Previously Presented) The method of claim 90, wherein the iron-containing material comprises at least one carbon compound.

101. (Previously Presented) The method of claim 90, further comprising introducing at least one carbon compound along with the iron-containing material, the at least one carbon compound promoting the reduction of iron oxides and the at least one carbon compound being one or more of a hydrocarbon, oil, grease, and xanthan gum.

102. (Previously Presented) The method of claim 90, wherein the wet-bottom boiler comprises:

a particle size reduction device, wherein the solid fuel is fed to the device;

a burner;

a fuel transfer system communicating with the device and the burner; and

a combustion chamber comprising an enclosure at least partially surrounding the burner and further comprising:

introducing the iron-containing material into at least one of the fuel storage bunker, the fuel transfer system, the cyclone burner, and the combustion chamber.

103. (Previously Presented) The method of claim 93, wherein the cyclone boiler comprises:

a fuel storage bunker;

a cyclone burner;

a fuel transfer system communicating with the fuel storage bunker and the cyclone burner; and

a combustion chamber comprising an enclosure at least partially surrounding the burners.

104. (Previously Presented) The method of claim 90, wherein the iron-containing material is introduced into the boiler in an amount ranging from about 10 lb/ton of solid fuel to about 50 lb/ton of solid fuel.

105. (Previously Presented) The method of claim 90, wherein the ash slag has a total iron concentration of at least about 15 weight percent.

106. (Previously Presented) The method of claim 90, wherein the iron-containing material is added to the solid fuel before introducing the solid fuel and the iron-containing material into the boiler.

107. (Previously Presented) The method of claim 90, wherein the ash slag has a melting temperature less than the melting temperature of the second ash slag produced from the combustion of the solid fuel alone.

108. (Previously Presented) The method of claim 90, wherein the iron-containing material is selected from the group consisting of ferrous oxide, ferric oxide, ferrous sulfide, ferric sulfide, and combinations thereof.

109. (Previously Presented) The method of claim 90, wherein, in the at least partially combusting step, at least one ash fusion temperature characteristic selected from the group consisting of initial deformation temperature, softening temperature, hemispherical temperature, and fluid temperature of the ash slag is less than the same ash fusion temperature characteristic of the second ash slag produced from combustion of the solid fuel alone.

110. (Previously Presented) The method of claim 109, wherein the at least one ash fusion temperature characteristic is less than 2600°F.

111. (Canceled).

112. (Currently Amended) A method of operating a solid fuel fired boiler, comprising:

introducing a solid fuel into a wet-bottom boiler, the solid fuel comprising a low sulfur coal having a sulfur content of less than about 1.5 wt.% (dry basis of the coal);

introducing an iron-containing material into the wet-bottom boiler, wherein the iron-containing material comprises iron oxides; and

at least partially combusting the solid fuel to produce an ash slag, wherein at least a portion of the iron-containing material fluxes the ash slag to cause the ash slag to have a viscosity less than a viscosity of a second ash slag produced from the combustion of the solid fuel alone.

113. (Currently Amended) The method of claim 112, wherein the solid fuel comprises a sub-bituminous coal ~~and wherein the low sulfur coal has a total sulfur content of less than about 1.5 wt.% (dry basis of the coal)~~.

114. (Previously Presented) The method of claim 112, wherein the boiler is for at least one of steam production and electricity generation and wherein the iron-containing material has a P_{90} size of no more than about 300 microns.

115. (Previously Presented) The method of claim 112, wherein the boiler is a cyclone boiler, wherein the solid fuel has a total iron content of less than about 10 wt.% (dry basis of the ash), and wherein the solid fuel has an alkali content of at least about 20 wt. % (dry basis of the ash).

116. (Previously Presented) The method of claim 112, wherein the ash slag has a viscosity such that the ash slag flows from the wet-bottom boiler.

117. (Previously Presented) The method of claim 112, further comprising reducing the particle size of the solid fuel prior to introducing the solid fuel into the boiler.

118. (Previously Presented) The method of claim 112, wherein the iron-containing material is mill scale from steel production.

119. (Previously Presented) The method of claim 112, wherein the iron-containing material is dust from blast furnace gas cleaning equipment.

120. (Previously Presented) The method of claim 112, wherein the iron-containing material comprises at least one of ferrous oxide and ferric iron oxide.

121. (Previously Presented) The method of claim 112, wherein the iron-containing material comprises magnetite.

122. (Previously Presented) The method of claim 112, wherein the iron-containing material comprises at least one carbon compound.

123. (Previously Presented) The method of claim 112, further comprising introducing at least one carbon compound along with the iron-containing material, the at least one carbon compound promoting the reduction of iron oxides and the at least one carbon compound being one or more of a hydrocarbon, oil, grease, and xanthan gum.

124. (Previously Presented) The method of claim 112, wherein the wet-bottom boiler comprises:

a particle size reduction device, wherein the solid fuel is fed to the device;

a burner;

a fuel transfer system communicating with the device and the burner; and

a combustion chamber comprising an enclosure at least partially surrounding the burner and further comprising:

introducing the iron-containing material into at least one of the fuel storage bunker, the fuel transfer system, the cyclone burner, and the combustion chamber.

125. (Previously Presented) The method of claim 115, wherein the cyclone boiler comprises:

a fuel storage bunker;

a cyclone burner;

a fuel transfer system communicating with the fuel storage bunker and the cyclone burner; and

a combustion chamber comprising an enclosure at least partially surrounding the burners.

126. (Previously Presented) The method of claim 112, wherein the iron-containing material is introduced into the boiler in an amount ranging from about 10 lb/ton of solid fuel to about 20 lb/ton of solid fuel.

127. (Previously Presented) The method of claim 112, wherein the ash slag has a total iron concentration of at least about 15 weight percent.

128. (Previously Presented) The method of claim 112, wherein the iron-containing material is added to the solid fuel before introducing the solid fuel and the iron-containing material into the boiler.

129. (Previously Presented) The method of claim 112, wherein the ash slag has a melting point in the boiler less than the melting point in the boiler of the second ash slag produced from the combustion of the solid fuel alone.

130. (Previously Presented) The method of claim 112, wherein the iron-containing material is selected from the group consisting of ferrous oxide, ferric oxide, ferrous sulfide, ferric sulfide, and combinations thereof.

131. (Previously Presented) The method of claim 112, wherein, in the at least partially combusting step, at least one ash fusion temperature characteristic selected from the group consisting of initial deformation temperature, softening temperature, hemispherical temperature, and fluid temperature of the ash slag is less than the same ash fusion temperature characteristic of the second ash slag produced from combustion of the solid fuel alone.

132. (Previously Presented) The method of claim 131, wherein the at least one ash fusion temperature characteristic is less than 2600°F.

133. (Canceled).

134. (Currently Amended) A method for operating a slag type furnace, comprising:

introducing a coal-containing fuel into said slag type furnace, the coal-containing fuel comprising a low sulfur coal having a sulfur content of less than about 1.5 wt.% (dry basis of the coal);

introducing an iron-containing additive into the slag type furnace in an amount sufficient to flux the coal-containing fuel; and

melting at least a portion of the coal-containing fuel to produce an ash slag, wherein, in the melting step, at least a portion of the iron-containing additive fluxes the ash slag to produce a slag layer having a melting point less than a melting point of a second slag layer without the iron-containing additive.

135. (Previously Presented) The method of claim 134, wherein at least about 33.5% of the iron-containing additive is in the form of ferrous iron and no more than about 66.5% of the iron in the additive is in the form of ferric iron.

136. (Previously Presented) The method of claim 134, wherein the additive is in the form of a free-flowing particulate having a P_{90} size of no more than about 300 microns.

137. (Currently Amended) The method of claim 134, wherein the additive comprises one or more of mill scale fines and particles removed by particulate collection systems from one or more of offgases of steel manufacturing and offgases from iron manufacturing, ~~wherein the low sulfur coal has a total sulfur content of less than about 1.5 wt.% (dry basis of the coal),~~ and wherein the coal-containing fuel has a total iron content of less than about 10 wt.% (dry basis of the ash).

138. (Canceled).

139. (Previously Presented) The method of claim 134, wherein the coal-containing fuel has a total iron content of less than about 10 wt. % (dry basis of the ash) and a calcium content of at least about 15 wt. % (dry basis of the ash).

140. (Previously Presented) The method of claim 24, wherein the boiler is a slag-tap furnace.

141. (Previously Presented) The method of claim 24, wherein the solid fuel boiler is used for at least one of steam production and electricity generation.

142. (Canceled).